RESEARCH, DEVELOPMENT & TECHNOLOGY TRANSFER
QUARTERLY PROGRESS REPORT

Wisconsin Department of Transportation
DT1241 4/2010

INSTRUCTIONS:
Research project investigators and/or project managers should complete a quarterly progress report (QPR) for each calendar quarter during which the projects are active.

WisDOT research program category: ☐ Policy research ☒ Wisconsin Highway Research Program ☐ Other ☐ Pooled fund TPF#		Report period year: 2010 ☐ Quarter 1 (Jan 1 – Mar 31) ☐ Quarter 2 (Apr 1 – Jun 30) ☒ Quarter 3 (Jul 1 – Sep 30) ☐ Quarter 4 (Oct 1 – Dec 31)
Project title: Effective Depth of Soil Compaction in Relation to Applied Compactive Energy – Fine-Grained Soil Supplement Project		
Project investigator: Dante Fratta	Phone: 608-265-5644	E-mail: fratta@wisc.edu
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WisDOT contact: Bob Arndorfer	Phone:	E-mail: robert.arndorfer@dot.state.wi.us
WisDOT project ID: 0092-08-11	Other project ID:	Project start date: 10/10/2007
Original end date: 4/10/2007	Current end date: 9/30/2011	Number of extensions: 1

Project schedule status:
☒ On schedule ☐ On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Project budget status:

Total Project Budget	Expenditures Current Quarter	Total Expenditures	% Funds Expended	% Work Completed
$103,914.00	$8,783.74	$65,220.00	62%	75%

Project description:
The proposed work plan complements the study performed on the evaluation of effective depth of compaction on coarse-grained soils. This study will collect and evaluate data from actual embankment construction operations to evaluate the effective depth of compaction on fine-grained soils.

The proposed work plan will be divided in three phases:
I. Evaluation of the response and effect of compaction operations in fine-grained soils
II. Establish correlations between experimental data and theoretical/numerical predictive models
III. Draft recommendations for optimum lift thickness in Wisconsin embankment construction for coarse and fine-grained soils.

Progress this quarter (includes meetings, work plan status, contract status, significant progress, etc.):
Right after the approval of the project during Summer 2010, we met with DOT officials Bob Arndorfer and Jeff Horsefall to discuss the implementation of the project and to coordinate the research objectives with WisDOT needs. We aggreed to identify a testing site and to start testing late Summer or early Spring 2010. Scheduling problem with different contractors preventing start the field testing this year. The PI will coordinate with DOT officials a new testing schedule for Spring 2010.

A literature review to identify of the principal variables that influences the compaction process have been conducted in order to start building a numerical model that will be used to interpret the field data. The compceptual numerical model, considering

the variables involved in the compaction process, is being built and encoded into a computer program. In addition to numerical simulation, a preliminary design of a laboratory test is beind developed as well as the materials and the monitoring system needed for is implementation.

Anticipated work next quarter:

The following work for the next three months will be divided in two main tasks. The first task includes the numerical work which will be focused into continuing writing and extending the numerical model. The second task is the development of the experimental model. It is expected in this quarter to conduct part of the tests required in laboratory scale.

Circumstances affecting project or budget:

DOT officials were not able to secure access to a testing site during the late Summer and early Fall 2010. We will try to schedule the field testing part of the project in early Spring,

Gantt Chart:

Phase Number	1.25 Years (15 months)				
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5
Phase I	X	X	X (if required)		
Phase II		X	X	X	
Phase III		X	X		
Phase IV					X

Attach / insert Gantt chart and other project documentation

FOR WISDOT USE ONLY

Staff receiving QPR:	Date received:
Staff approving QPR:	Date approved: